

Amendments to the Drawings:

The attached sheets of drawings include changes to Figures 1-7. These sheets, which include Figs. 1-7, replace the original sheets including Figs. 1-7.

Attachment: Replacement Sheets

REMARKS

This amendment is being filed in response to the Office Action having a mailing date of July 19, 2007. Various claims are amended as shown. New claims 42-47 are added. No new matter has been added. With this amendment, claims 1-47 are pending in the application.

I. Preliminary comments

The present Office Action indicated that Figures 1-7 should be designated with a "Prior Art" label. Accordingly, replacement sheets of drawings, having amended Figures 1-7, are being submitted herewith.

The present Office Action rejected claims 28-29 under 35 U.S.C. § 112, second paragraph for being indefinite, due to antecedent basis issues. Claims 28-29 are amended as shown to address the antecedent basis issues. It is noted that claims 28-29 were not rejected on the basis of any cited reference(s).

Upon further review of the pending claims, it was discovered that it was appropriate to amend certain claims to provide consistent antecedent basis, to make typographical corrections, and/or to otherwise place such claims in better form. Thus, claims 1-2, 6-7, 10-12, 15-19, 23-29, and 31-37 are amended as shown, including amendments to claims 1, 10-11, 16-17, 19, and 31-36 to clarify that certain recitations contained therein and in their related claims do not fall within the scope of 35 U.S.C. § 112, sixth paragraph.

II. Allowable subject matter

The present Office Action allowed claims 1-22, and further indicated that dependent claims 24, 26-27, 30-39, and 41 would be allowable if rewritten in independent form. The Examiner is thanked for this indication of allowable subject matter.

Accordingly, new independent claim 42 has been written along the lines of former claims 23 and 26 combined, and new independent claim 45 has been written along the lines of former claims 23 and 31 combined. The new dependent claims that respectively depend upon new independent claims 42 and 45 also recite subject matter consistent with the subject matter indicated to be allowable. Thus, it is respectfully submitted that new claims 42-47 are in condition for allowance.

Page 5 of the present Office Action provided a Statement of Reasons for Allowance. However, it is noted that the Statement only makes reference to Stribling (U.S. Patent No. 5,144,260) and does not discuss the other references on record, and further only specifically sets forth partial language from certain claims. It noted herein for the record that the claims are allowable over all of the references on record, whether singly or in combination with Stribling. Further, it is noted herein for the record that the claims are allowable based on the recitations contained in each and every claim, and further that the dependent claims are allowable based not only on the recitations contained therein but also by virtue of their dependency upon allowable base claims. Thus, the scopes of the claims are not to be limited by the Statement.

III. Discussion of the claims rejected on the basis of references

The present Office Action rejected claims 23 and 25 under 35 U.S.C. § 102(b) as being anticipated by Stribling. Claim 40 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Stribling in view of Cruz (U.S. Patent No. 6,016,082). For the reasons set forth below, these rejections are respectfully traversed.

Independent claim 23 as amended recites, *inter alia*, “injecting, into a core of the voltage controlled oscillator, an injection pulling compensation signal.” Support for this amendment can be found, for example, in Figures 8-9 and the accompanying description in the present application.

In particular, the disclosed embodiment shows injecting a compensation signal BComp into the core of a voltage controlled oscillator (VCO), and not at injection at the control input of the VCO. This feature clearly appears in Figures 8-9 of the present application where it can be seen that the compensation signal Bcomp is not applied to the control input of the VCO (coupled to “LOOPF”), but rather at injection points P1, P2, P3, etc. Examples of injection points P1, P2, P3... are described in the present application referring to Figure 9, where it is clearly shown that the injection points P1, P2, P3 ... for the compensation signal BComp are different from the control point of the VCO, which instead receives the DC voltage Vcont and forms the control signal of the VCO.

In contrast, Figure 4 of Stribling shows a compensation signal injected in a phase locked loop (PLL) using a summing circuit 65, in order for the compensation signal to be added to the control signal of a VCO supplied by a phase comparator 45. Thus, since Stribling provides/adds (via the summing circuit 65) his compensation signal to the control signal of the VCO, Stribling cannot meet the limitations of claim 23 that require “injecting, into a core of the voltage controlled oscillator, an injection pulling compensation signal.”

Thus, claim 23 is allowable over Stribling.

Claim 23 as further amended recites, *inter alia*, that the compensation signal has a frequency that is “within a bandwidth of the voltage controlled oscillator.” As evident from the present application, the compensation signal of an embodiment is an AC signal having the same frequency as the spurious signal, the effect of which have to be suppressed. This compensation signal has a phase and amplitude to enable the neutralization of the spurious signal. This is clearly explained in the present application where it is stated that: “*the phase and the amplitude of which are adjusted so as to neutralize the disturbing effects of the harmonic component.*” The compensation signal has therefore a frequency that is close to the central frequency of the VCO, in other words within the bandwidth of the VCO.

In contrast, the compensation signal according to Stribling is a DC signal (rather than an AC signal having a frequency) supplied by an integrator 55. This DC compensation signal is injected into the PLL using to an analog switch 60 driven by a data modulation signal (line 20) supplied by a control circuit 10 (T/R Control) in Stribling’s Figure 4. This DC compensation signal only allows correction of slow perturbations in the PLL. This characteristic is confirmed by Stribling in lines 9-11 of his Abstract: “*This compound loop can effectively cancel perturbations whose dynamics change only slowly compared to the speed of the added synchronous loop.*”

Thus, since Stribling’s compensation signal is a DC signal rather than an AC signal and further does not neutralize disturbing effects of the harmonic component, Stribling’s compensation signal cannot meet the requirements of claim 23 for a compensation signal having a frequency within a bandwidth of the VCO and other limitations in claim 23.

Hence, claim 23 is further allowable over Stribling.

IV. Conclusion

Overall, none of the references singly or in any motivated combination disclose, teach, or suggest what is recited in the independent claims. Thus, given the above amendments and accompanying remarks, the independent claims are now in condition for allowance. The dependent claims that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 622-4900.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

/Dennis M. de Guzman/

Dennis M. de Guzman
Registration No. 41,702

DMD:lcs

Enclosure:

3 Sheets of Replacement Drawings (Figures 1-7)

701 Fifth Avenue, Suite 5400
Seattle, Washington 98104
Phone: (206) 622-4900
Fax: (206) 682-6031